CLAIMS:

1. A method for bulk laser ablation of a fluorocarbon resin which comprises irradiating laser light onto or penetrating into a fluorocarbon resin containing a UV absorbing material.

2. The method of claim 1, wherein the UV absorbing material is present in the fluorocarbon resin in an amount from about 0.1 wt. % to about 25 wt. %.

3. The method of claim 1, wherein the UV absorbing material is present in the fluorocarbon resin in an amount from about 0.5 wt. % to about 15 wt. %.

4. The method of claim 1, wherein the UV absorbing material is carbon black.

5. The method of claim 1, wherein the wavelength of laser light is from about 180 nm to about 400 nm.

6. The method of claim 1, wherein the fluence of laser light is from about 0.1 J/cm^2/pulse to about 1 J/cm^2/pulse or higher.

7. The method of claim 1, wherein the fluence of laser light is from about 1 J/cm^2/pulse to about 10 J/cm^2/pulse.

8. A method for bulk laser ablation of a fluorocarbon resin which comprises irradiating laser light onto or penetrating into a fluorocarbon resin containing a UV absorbing material, said UV absorbing material present in an amount of from about 0.1 wt. % to about 25 wt. %, the wavelength of the laser light is from about 180 nm to about 400 nm, the fluence of the laser light is greater than 0.5 J/cm^2/pulse.

9. The method of claim 8, wherein the dopant is present in an amount from about 0.5 wt. % to about 15 wt. %.

10. The method of claim 8, wherein the dopant is present in an amount from about 1 to about 10 wt. %.

11. The method of claim 9, wherein the dopant is present in an amount of about 4 to 6 wt. %.

12. The method of claim 8, wherein the dopant is carbon black.

13. The method of claim 8, wherein the wavelength of the laser light is from about 193 nm to about 355 mn.

14. The method of claim 8, wherein the wavelength of the laser light is from about 248 nm to about 315 mn.

15. The method of claim 8, wherein the translational movement of the laser is from about 0.1 mm/sec to about 2 mm/sec.

16. A method of bulk microstructure microfabrication of a substrate comprising the steps:

obtaining a fluorocarbon resin substrate containing a UV absorbing material, said UV absorbing material present in an amount of from about 0.1 wt. % to about 25 wt. %; and

irradiating laser light onto or penetrating into the fluorocarbon resin, the wavelength of the laser light being from about 180 nm to about 400 nm, the fluence of the laser light being greater than 1 J/cm^2/pulse.

17. The method of claim 16, wherein the UV absorbing material is carbon black, a metal oxide, or a UV absorbing organic dopant.

18. The method of claim 16, wherein the UV absorbing material is carbon black.

19. The method of claim 16, wherein the UV absorbing material is present in the fluorocarbon resin in an amount from about 0.5 wt. % to about 15 wt. %.

20. The method of claim 16, wherein the UV absorbing material is present in the fluorocarbon resin in an amount from about 1 wt. % to about 10 wt. %.

21. The method of claim 16, wherein fluorocarbon resin is irradiated with the laser light of sufficient duration and intensity to fabricate microchannels and/or wells in the fluorocarbon resin substrate.

22. A method of bleaching a substrate comprising the steps:

obtaining a fluorocarbon resin substrate containing carbon black in an amount of from about 0.01 wt. % and 1 wt. %; and

irradiating laser light onto or penetrating into the fluorocarbon resin.

23. A method of microfabricating microfluidic structures in fluorocarbon materials comprising the steps:

obtaining a fluorocarbon resin substrate containing a UV absorbing material, said UV absorbing material present in an amount allowing for adequate depth control of material removal during the laser ablation process;

irradiating laser light onto or penetrating into the fluorocarbon resin, the wavelength of laser light being from about 193 nm to about 355 nm; and

translating the substrate or the laser beam relative to each other to generate microfluidic structures of the desired dimensions.

24. The method of claim 23 where the fluence of the laser light is greater than about 0.1 J/cm^2/pulse.

25. The method of claim 23 where the fluence of the laser light is greater than about 1 J/cm^2/pulse.

26. The method of claim 23, wherein the UV absorbing material is present in the fluorocarbon resin in an amount from about 0.5 wt. % to about 15 wt. %.

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